Integers

- #include <stdint.h>

  uint32_t

  int32_t

  uint16_t

  int8_t
- This helps with midsquare so you know exactly how big each int is.
- Take the middle 4 or 8 bits.

Chaining

- What is in the chain in a hashtable?

Bucket	Item
0	
1	
2	
3	
4	

Insert:
5, Apple
3, Orange
8, Banana
10, Coffee

Function Pointer Examples

```
typedef void(*DataVisitor)(void*);

typedef struct ListElement
{
  void *psData;
  struct ListElement *psNext;
} ListElement;

typedef struct List
{
  ListElement *psHead;
  DataVisitor pPrinter;
  DataVisitor pInitializer;
  DataVisitor pUpdater;
} List;
```

```
void printList(List* pList)
{

  ListElement *pItem;

  pItem = pList->psHead;
  while( pItem )
  {
    (*pList->pPrinter) (pItem->psData);

    pItem = pItem ->psNext;
  }
}
```

```
void printInt(void* pInt) // must match DataVisitor!   void()(void*)
{
  printf("%d", *(int*) pInt);
}

void printChar(void* pChar)
{
  printf("%c", *(char*) pChar);
}

int main()
{
  List sIntList;
  List sCharList;


  sIntList.pPrinter = printInt;
  sCharList.pPrinter = printChar;

  // add ints to sIntList
  // add chars to sCharList

  printList(&sIntList);
  printList(&sCharList);
}
```